DOCUMENT RESUME

ED 391 196 CS 509 139

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TITLE Learning the Hard Way: Learning Styles and At-Risk Populations.
PUB DATE 18 Nov 95
NOTE 46p.; Paper presented at the Annual Meeting of the Speech Communication Association (81st, San Antonio, TX, November 18-21, 1995).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Descriptive (141)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Black Students; Cognitive Structures; *Cognitive Style; Educational Research; Ethnography; *High Risk Students; High Schools; *High School Students; Learning Modalities; Speech Communication
IDENTIFIERS African Americans; Cognitive Research; Illinois

ABSTRACT

African American cognitive Styles have not received much attention in research. An intended ethnographic study will examine the preferred cognitive styles employed by African American students in the classroom. The literature on African American cognition indicates that they are likely to utilize field dependent cognitive styles. The setting will be a large urban high school in an Illinois community. The selected population will include students in different speech classes. A large portion of the data will be gathered through participant observation. In-depth interviews will also be conducted. Three cognitive style assessments will be administered. (Contains 37 references and a table listing characteristic differences in field dependence/independence. The three cognitive style assessments to be used are attached.) (RS)

Running head: LEARNING THE HARD WAY

Learning the Hard Way: Learning Styles and At-Risk Populations

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Presented at the

Speech Communication Association Convention

San Antonio, Texas

November 18, 1995

In recent years, the importance of recognizing the unique characteristics of different cultures has drawn increased attention. In fact, many scholars have suggested that educators must be especially concerned with understanding the implications of cultural diversity in the classroom. Specifically, educators are becoming increasingly aware that different cultural groups may utilize different cognitive styles in the classroom. Moreover, in many instances, these styles may conflict with traditional learning environments. The result may be a rejection of the students' preferred cultural cognitive style in favor of established or traditional cognitive styles. A learning environment which fails to recognize the unique characteristics of its students' learning preferences may also fail to provide a solid foundation for educational success. The primary purpose of this study is to define and outline African American cognitive styles. It is my hope that this research will assist educators in recognizing diverse cognitive styles in the classroom. I also hope that this study will help educators understand the roles differences in cognition play in the learning process. According to Ramirez (1973), educational programs "which are not based on the unique learning styles of the people they serve do not provide culturally relevant learning environments and are culturally undemocratic" (p. 897). A better understanding of the influence of diverse cognitive styles in the scheme of learning could potentially aid educators in tailoring teaching styles to diverse student populations.

Understanding the pervasiveness of different cognitive styles could be useful in other areas. For example, it has been my experience in the world of high school and intercollegiate debate that very few African Americans participate in the activity. High school and college debate involve a strong emphasis on research and logical analysis. Most

students who are successful in intercollegiate debate appear to utilize a linear, structured, logical, cognitive style. Students whose cognitive styles do not match those utilized in high school and intercollegiate debate may fail to become involved or to succeed in the activity. Understanding the role of cognitive styles could help those involved with high school and intercollegiate debate expand the activity to new populations.

Finally, I hope that the results of this project will contribute to the existing communication studies of cognitive styles and serve as a foundation for future research in this area. Research in the future should focus on, among other areas, the role of culture in cognition as well as the cognitive preferences of groups other than African Americans. For these reasons, it seems important to explore African American cognitive styles in the classroom. An ethnographic study of a selected high school will provide insight into the larger world of classrooms and should yield significant information about the cognitive styles utilized by African American students. The research questions for this study are outlined in the following section.

Research Questions

In accordance with the ethnographic method, I will enter the field with a general research question. The initial direction for this research is, "What are the preferred cognitive styles employed by students in the classroom?" Within this question, I will explor sub-questions regarding preferences for particular subjects in high school, topics for speeches, as well as perceptions of cultural identification. After the initial observations and interviews have been conducted with students, I anticipate narrowing the focus to African American cognitive styles because this population is easily accessible. In addition, several scholars have

established the need for additional research in this area (Nance & Foeman, 1993; Perney, 1976; Shade, 1982; Shade & Edwards, 1987). The specific research question that I am interested in is: "What are the preferred cognitive styles employed by African American students in the classroom?" In order to explore cognitive styles, interviews will be conducted which examine the students' perceptions about their thinking patterns. These interviews, in turn, should reveal preferred cognitive styles.

Importance of Study

African American cognitive styles have not received much attention from ethnographic researchers. Most research centers on culture and communicative style. This study however, in examining African American cognitive styles in the classroom, should prove to be important in several ways.

Initially, Koester and Lustig (1991) note that "post-secondary institutions are increasingly making the recruitment and retention of non-Anglo U.S. students a priority" (p. 250). Educators in the future will be faced with increasingly multicultural student populations. To the extent that all of these students might not think alike, research on cognitive style seems important. According to Frank (1984), the "usefulness of cognitive style research depends greatly on its potential to uncover specific processing differences between field-independent and field-dependent students; such knowledge should help teachers develop classroom strategies that capitalize on the characteristics of th different styles of students" (p. 669-670). This study might suggest ways educators, at all levels, could facilitate more responsive learning environments by identifying differences in cognitive style.

Similarly, Guild and Garger (1985) characterize the importance of cognitive style

research in relation to multicultural education in the following terms:

> Another goal of multicultural education is respect for differences among people. The study of style can contribute directly to this goal by emphasizing the unique strengths of each person. As we seek to help every student and staff member recognize that it is the very differences among people that bring strength to our educational institutions, this recognition will carry over attitudes toward society. The goals of multicultural education and style go hand in hand. (p. 87)

This study may serve as a foundation for examining the cognitive styles of other groups in society. This should help educators better understand how diverse cognitive styles affect learning in the classroom.

In addition, this study may serve as an aid to those interested in competitive forensics and debate. A discussion of preferred cognitive styles could stimulate ways of encouraging greater participation in activities like debate and forensics. Also, this research should reinforce the significance for the study and continued interest in African American cognitive styles.

Finally, the approach taken in this study may help to reframe educators' perceptions of at-risk populations. In the past, students at-risk of academic failure have typically been referred to as dysfunctional, learning disabled, mentally challenged, as well as socially and economically disadvantaged. In fact, many approaches to defining, identifying, and responding to such populations are largely based on a medical or epidemiological model. This model posits that some students possess internal characteristics which place them at-risk. Often, at-riskness is compared to a disease that students may acquire and even transmit to others. While this approach has its advantages, it ignores important variables in the educational process. "Since the problem is believed to be inherent in the student, then the

search for the cause is limited to the characteristics of the students themselves. Characteristics of our society and school are left unexamined" (Richardson, Casanova, Placier, and Guilfoyle, 1989, p. 6). As a result, I seek to understand school and societal factors that place students at-risk.

LITERATURE REVIEW

Much of the literature establishes the importance of recognizing the existence of diverse cultures and cognitive styles as key elements in educational success. Specifically, African Americans have gained the attention of many researchers interested in cognitive style.

Cognitive Style

In this section, I review a portion of the diverse body of literature on cognitive style that springs from a number of disciplines including anthropology, cultural anthropology, psychology, cognitive psychology, and communication. As the literature reviewed previously indicates, many scholars have argued that culture has a pervasive influence on the way people behave and think. Much of the literature I reviewed indicates that culture influences the cognitive styles of individuals. Goldstein and Blackman (1978) define cognitive style as a "hypothetical construct that has been developed to explain the process of mediation between stimuli and responses. The term cognitive style refers to the characteristic ways in which individuals conceptually organize their environment" (p. 2). Shade (1982) claims that the term cognitive style "represents a superordinate construct that accounts for individual preferences in various cognitive, perceptual, and personality dimensions that influence differences in information processing" (p. 226). Furthermore, Jonassen and Grabowski (1993) argue that cognitive styles "reflect the ways in which learners process information to make sense out of their world. Cognitive styles are related to personality as well. The ways

in which we interact with information is reflective of the ways in which we interact with each other through our personality" (p. 173). Those who examine cognitive styles from a cross-cultural perspective are particularly interested in how culture mediates specific cognitive processes. Lieberman (1991) defines cognitive processes as the "universal cerebral means employed to handle a specific task or problem at hand" (p. 229). The next section of this thesis is devoted to a review of the literature concerning different theoretical approaches to cognitive styles.

Approaches to the Study of Cognition

As noted previously, there is a substantial amount of literature from a number of different academic disciplines regarding cognitive styles. According to Shade (1982), research on cognitive styles may be placed in one of the following three categories:

> Category 1 includes those emphasizing visual-spatial preferences; Category 2 includes those which are more concerned with strategies for concept attainment and thus focus on categorization and abstraction preferences; Category 3 seems oriented more toward personality, ways in which the individual views and responds to information about the world or environment. (p. 226)

Goldstein and Blackman (1978) further clarify research in this area by delineating the following predominant theoretical approaches to the study of cognitive style: (a) authoritarianism, rigidity, and intolerance of ambiguity, (b) dogmatism, (c) personal constructs and cognitive complexity, (d) integrative complexity, and (e) field dependence.

Authoritarianism

According to Goldstein and Blackman (1978), this approach to the study of cognition was developed by T. W. Adorno, Else Frenkel-Brunswik, Daniel J. Levinson, and R. Nevitt Sanford (1950) who pioneered research on authoritarian personalities. Research on

authoritarian personalities began during the years of Adolf Hitler's rise to power in an attempt to explore prejudice and to explain the nature of fascist thought. As Adorno et al. (1950) note, the major concern of this research was with the "potentially fascistic individual, one whose structure is such as to render him particularly susceptible to antidemocratic propaganda" (p. 1). This research shed light on two types of behavior reflecting cognitive style, rigidity and intolerance of ambiguity. Goldstein and Blackman (1978) claim that an examination of data collected during the course of this research "revealed authoritarian subjects to be more intolerant of ambiguity and more rigid than nonauthoritarian subjects. The intolerance was felt to be a generalization of the individual's intolerance of emotional ambivalence" (p. 19). Jonassen and Grabowski (1993) define rigidity as one's resistance "to review and change one's judgment of a proposed solution to a problem" (p. 105). Also, Goldstein and Blackman (1978) remark that research by Adorno et al. (1950) revealed that "rigidity was evident when the authoritarian individual refused to relinquish ethnic stereotypes when faced with information contradicting the stereotype. Another characteristic of rigidity is that the individual's cognitions are compartmentalized and walled-off from each other, resulting in an apparent lack of consistency" (p. 19).

Dogmatism

The second approach to cognitive style discussed by Goldstein and Blackman (1978), dogmatism, was developed by Milton Rokeach. Rokeach (1954) defines dogmatism as "(a) a relatively closed cognitive organization of beliefs and disbeliefs about reality, (b) organized around a central set of beliefs about absolute authority which, in turn, (c) provides a framework for patterns of intolerance and qualified tolerance towards others" (p. 195). One

of the primary concerns of Rokeach was that the treatment of authoritarianism by Adorno et al. focused too heavily on political ideology and prejudice. Rokeach (1954) clarified the distinctions between his theory of dogmatism and previous research on authoritarianism when he wrote the following:

> It is widely recognized, however, that authoritarianism is also manifest among radicals, liberals, and middle-of-the roaders as well as among conservatives and reactionaries. Furthermore, authoritarianism can be recognized as a problem in such areas as science, art, literature, and philosophy, where fascism and ethnocentrism are not necessarily the main issues or may even be totally absent as issues. As pointed out in this paper, dogmatism, which is assumed to involve both authoritarianism and intolerance, need not necessarily take the form of fascist authoritarianism or ethnic intolerance. (p. 202)

According to Goldstein and Blackman (1978), Rokeach "theorized that, as a cognitive style, dogmatism mediates between external stimuli and the individual's responses to those stimuli. Because of this cognitive mediation, the individual who is dogmatic in one area is likely to be dogmatic in another" (p. 63).

Cognitive Complexity

Goldstein and Blackman (1978) claim that researchers interested in cognitive complexity are "concerned with psychological dimensions that individuals use to structure their environment" (p. 13). According to Jonassen and Grabowski (1993), cognitive complexity/simplicity "describes an individual's discriminating perception of his or her environment or social behavior. This perception describes the way an individual understands, anticipates, and predicts events" (p. 149). This approach to the study of cognition was established by George A. Kelly. Kelly's major contribution to cognitive complexity theory came in 1955 with the publication of The Psychology of Personal Constructs. Diamond (1985) explains the work of Kelly in the following terms:

> Kelly (1955) emphasizes the way that people interact with their world and actively process rather than passively store their experiences. He describes people as developing sets of hypotheses or construct systems in which their present abstractions are tentatively placed on past experiences and then later are projected upon future events in order to cope with those events. These hypotheses are individually constructed from experience and through them each person sees and interprets the world. The system is more like a pair of spectacles than a filing cabinet or knapsack since not only does the person get information through it but it even conditions what and how he or she experiences. The construct system busily seeks verification and does not wait. (p. 15)

Tiedemann (1989) further clarifies differences between cognitively complex and simple individuals by noting that the "conceptual system of a cognitively complex individual is highly differentiated (using a large number of distinct dimensions), finely articulated (capable of discriminating the strength of varied stimuli), and flexibly integrated (dimensions being multiply interrelated and organized)" (p. 265).

Integrative Complexity

This approach to the study of cognition was initially outlined in Harvey, Hunt, and Schroder's (1961) Conceptual Systems and Personality Organization and later expanded in Schroder, Driver, and Streufert's (1967) Human Information Processing. Jonassen and Grabowski (1993) note that a significant contribution to integrative complexity was made by Harvey et al. (1961) with the delineation of the following four levels of cognitive functioning:

> System I--derived from authoritarian, restrictive environment--individual characteristics include concreteness, absolutist viewpoint, bias, identification with authority, ethnocentrism, and dependency on external environment
>
> System II--derived from ambiguous environment--individual characteristics include less concrete, disassociation between self and environment leading to uncertainty, distrust, and rebellion against authority

> System III--derived from over-protective, over-indulgent background--individual characteristics include more abstractness, little exploration of physical and social world, autonomy, apathy, less rebellion, but a tendency to demonstrate dependency by manipulating others
>
> System IV--derived from childhood freedom to explore social and physical environment - individual characteristics include most abstract conceptualization, most cognitively complex, ability to solve problems with an open mind, positive internal standards, and integrated cognitive structure based on experience and thought. (p. 155)

Goldstein and Blackman (1978) summarize the integrative complexity approach when they state that the "view presented is that people engage in two activities in processing sensory input: differentiation and integration. Differentiation refers to the individual's ability to locate stimuli along dimensions. Integration refers to the individual's ability to utilize complex rules, or programs, to combine these dimensions" (p. 136).

Field Dependence/Independence

The final theoretical approach to the study of cognitive style reviewed by Goldstein and Blackman (1978) is field dependence/independence. They show that the father of this theory was Herman Witkin. The field dependence/independence approach examines cognitive style in relation to various perceptual domains. Witkin (1971) explains the approach in the following terms:

> It has been found that individual differences in this cognitive style are related to individual differences in body concept, in nature of the self and in the controls and defenses typically used. The specific characteristics which have been found to "go together" across psychological domains appear to reflect a tendency toward more differentiated or less differentiated psychological functioning. (p. 8)

Witkin, Dyk, Faterson, Goodenough, and Karp (1962) define psychological differentiation as the "complexity of a system's structure. A less differentiated system is a relatively homogeneous structural state; a more differentiated system is a relatively heterogeneous state"

(p. 9). Gudykunst, Ting-Toomey, and Chua (1988) show the connection between differentiation and cognitive style when they state that thought "based on increased differentiation is field independent, while thought based on lower levels of differentiation is field dependent. Field independence, therefore, involves differentiated and analytical thinking, rather than diffuse and global thinking" (p. 150).

According to Saracho (1988), the field dependence-independence dimension "is a bipolar dimension which contrasts two modes of functioning and compares one element of an individual's functioning on different cognitive tasks" (p. 214). Ramirez (1973) states that characteristics "which differentiate field sensitive from field independent individuals, then, are those which reflect preferred modes of relating to, classifying, assimilating, and organizing the environment" (p. 900). Jonassen and Grabowski (1993) highlight differences between field dependent (FD) and field independent (FI) thought in the following terms:

> FDs have a global cognitive style because they more readily allow the external cues of an experience to point the way to understanding. Field independents, on the other hand, are internally oriented and may ignore or even distrust external cues. FIs have an articulated cognitive style because they prefer to create their own models in an attempt to understand the perceived field. They are better at articulating their knowledge because they more readily impose their own structures on it. (p. 88)

While this approach to the study of cognition has been described as a bipolar dichotomy, it is important to consider that most people "fall somewhere in between these two extremes, exhibiting a moderate bias toward one style or the other, but sharing aspects of both across a range of different contexts" (Jonassen & Grabowski, 1993, p. 88). It is equally important to note that individuals may possess the ability to be bicognitive. Ramirez and Castaneda (1974) explain this possibility in the following terms:

> In our research we have observed adults and children who behave in both cognitive styles--that is, they exhibit "cognitive switching"--the ability to draw upon both field-sensitive and field-independent styles at any given time. The cognitive style these individuals employ seems to be dictated by characteristics of the activity, task, or particular social atmosphere. The behavioral versatility exhibited by these persons implies to us a bicognitive development. (p. 130)

In other words, this cognitive switching or bicognitive development may depend on the context of the task. Table 1, based on Jonassen and Grabowski's (1993) categorization of field dependent and field independent thought, provides further clarification of these cognitive styles.

It is also important to consider the pervasiveness of these cognitive styles. According to Witkin, Moore, Goodenough, and Karp (1977) "cognitive styles carry a message about what we traditionally call 'personality.' So, it is a feature of personality, and not alone of cognition in the narrow sense, that an individual likes to be among people, is particularly attentive to what others say and do, and takes account of information from others in defining his own beliefs and sentiments" (p. 14). In addition, Witkin (1978) claims that "cognitive styles guide the formation of modes of behavior in people which are compatible with their styles" (p. 31). Witkin (1978) contrasts some of the behavioral differences between those who employ field dependent and field independent cognitive styles in the following terms:

> Field-dependent people seek both physical and emotional closeness to others which, in turn, provides them with experience in interpersonal relations, whereas field-independent people prefer to keep others "at arms length." Field-dependent people pay selective attention to social cues, in contrast to field-independent people who are relatively insensitive to such cues. (p. 20)

Ramirez (1973) also suggests that "field sensitive individuals are more influenced by, or more sensitive to the human element in the environment" (p. 900). In addition, Witkin (1978)

states that those who utilize field dependent cognitive styles have been characterized by researchers as "sociable, interested in people, wanting to help others, having a concern for people, knowing many people, and being known to many. Descriptions of relatively field-independent people have included individualistic, aloof, and concerned with ideas and principles rather than people" (p. 20).

Other scholars interested in cognition have acknowledged the existence of two different cognitive styles. Although she refers to field dependent and field independent cognitive styles as holistic and analytic, Cooper (1980) states that "the holistic thinker relates to the environment as a whole; the analytic thinker focuses on part of a field as discrete from its surroundings. The holistic thinker is socially oriented; the analytic thinker is task-oriented. The two types of thinkers differ in what they attend to, in what is important to them" (p. 45). Cohen (1969) summarizes research initiated in 1963 at the Learning Research and Development Center at the University of Pittsburgh. This research centered around the conceptual styles of low-income school children. According to Cohen (1969), the research involved the analysis of the "cognitive requirements of the school and their derivative social and psychological behaviors and those learning characteristics brought to the school by children from low-income homes" (p. 828). The children were administered widely used standardized tests of intelligence to enable the researchers to "identify the generic requirements for achievement that such instruments make of the people to whom they are administered" (p. 829). The results of this research confirmed the existence of field dependent and field independent or relational and analytic cognitive styles. Cohen (1969) states that "two conceptual styles have been identified and demonstrated reliably--relational

Table 1

Characteristic Differences in Field Dependence/Independence

Field Dependent	Field Independent
global	analytic
accepts structure	generates structure
externally directed	internally directed
attentive to social information	inattentive to social cues
conflict resolvers	philosophical, cognitive
sociable and gregarious	individualistic
affiliation oriented	distant in social relations
interpersonal	intrapersonal
needs friendship	reserved, aloof
conventional, traditional	experimental
influenced by the salient features	generates own hypotheses
factually oriented	conceptually oriented
acquires unrelated facts	acquires information to fit conceptual scheme
accepts ideas as presented	represents concepts through analysis
influenced by format/structure	less affected by format/structure
gets feelings/decisions from others	impersonal orientation
sensitive to others	insensitive to social undercurrents
affected by stress	ignores external stress

and analytic. Relational and analytic conceptual styles were found to be associated with shared-function and formal primary group participation, respectively, as socialization settings" (p. 842). This research helps to clarify and confirm the existence of different ways of thinking. In the next section, I review literature that refers to the characteristics of African American cognitive styles.

African American Cognitive Styles

The literature on African American cognition indicates that they are likely to utilize field dependent cognitive styles. Initially, some scholars have offered broad generalizations about the cognitive styles of African Americans. White (1970) suggests that the psychological orientation to reality of African Americans is distinct from that of whites. Specifically, he feels that this orientation is more affective while that of whites is more objective. According to White (1970), "people who grow up in the black community tend to be much more intuitive in terms of their response to signs and gestures than they are in relating to concrete syntax" (p. 56). In addition, Cooper (1980) notes that although "there is a continuum of style, some individuals and cultural groups cluster at one end or another of this continuum. Mexican-Americans and Black Americans are two groups that tend to have large numbers of holistic thinkers" (p. 45). Hale-Benson (1982) goes so far as to claim that African American culture influences the development of holistic or field dependent cognitive styles. Specifically, Hale-Benson (1982) argues that "Afro-Americans participate in a culture that has its roots in West Africa. This culture gives rise to distinctive modes of child-rearing among African-American people. As a result, Black children may have distinctive learning and expressive styles that can be observed in their play behavior" (p. 5). Hilliard (1976) characterizes African American cognitive style in the following terms:

1. Afro-American people tend to prefer to respond to and with "gestalts" rather than to or with atomistic things. Enough particulars are tolerated to get a general sense of things. There is an impatience with unnecessary specifics. Sometimes it seems that the predominant pattern for mainstream America is the preoccupation with particulars along with a concomitant loss of a sense of the whole. There is the belief that

anything can be divided and subdivided into minute pieces and that these pieces add up to a whole.

2. Afro-American people tend to prefer inferential reasoning to deductive or inductive reasoning.

3. Afro-American people tend to prefer approximations over accuracy to "fifty decimal places."

4. Afro-American people tend to prefer a focus on people and their activities rather than things. The choice by so many students of the helping professions such as teaching, psychology, social work, and so forth cannot be explained by job availability or ease of curriculum.

5. Afro-American people have a keen sense of justice and are quick to analyze and perceive injustice.

6. Afro-American people tend to lean toward altruism, a concern for one's fellow man.

7. Afro-American people tend to prefer novelty and freedom. Witness the development of improvisations in music, styles in clothing, and so forth.

8. Afro-American people in general tend not to be "word" dependent. This is to say, there is a tendency to favor non-verbal as well as verbal communications. Words may be used as much to set a mood as to convey specific data. (pp. 38-39)

Although extremely broad, these scholar's generalizations serve as a basic working statement about African American cognition upon which a more elaborate explanation may be established.

In an article in which she reviews research on African American cognitive styles, Shade (1982) concludes that a "pattern seems to emerge that suggests that Afro-Americans have a field-dependent cognitive style" (p. 227). Several researchers have tested the hypothesis that African Americans tend to utilize field dependent cognitive styles. Ramirez and Price-Williams (1974) studied 180 fourth-grade children to determine whether Mexican American and African American students scored in a significantly more field dependent direction than

did the Anglo children. Ramirez and Price-Williams (1974) concluded that "members of groups which emphasize respect for family and religious authority and group identity, and which are characterized by shared-function family and friendship groups, tend to be field-dependent in cognitive style" (p. 217). Perney (1976) studied field dependence-independence among suburban African American and white sixth-grade students. In this study, 40 sixth-grade students equally divided by race and sex were administered the Embedded Figures Test. Perney (1976) found that "there were significant differences between white and black children and between girls and boys in their responses to the Embedded-figures Test. However, of the four groups studied, the one accounting for most of the differences in both cases was the Negro girls" (p. 978). Perney (1976) hypothesized that African American females may be raised in a culture that facilitates the development of field dependent cognitive styles. In addition, Jones (1978) investigated the meaning of black and white personality differences. In this study, Jones (1978) administered items obtained from the MMPI, California Psychological Inventory, and Embedded Figures Test to a group of 226 black and white junior college students. These psychological inventories were designed to test the personality characteristics of the respondents. Jones (1978) concluded that "further evidence for Black-White differences in personality processes is the greater field-dependence of Black subjects. The disparity in field-dependence-independence between the two races in this study surpasses the by now well established and predictable finding of sex differences in cognitive style" (p. 250).

As noted previously, research on cognitive style indicates that field dependent individuals tend to be much more interpersonally oriented than field independent individuals. Witkin

(1978) argues that "field-dependent people have what may be characterized, overall, as an interpersonal orientation" (p. 20). In addition, Shade (1982) claims that field dependent individuals "seem to demonstrate a preference for interpersonal relationships. This preference is manifested through a strong interest in other people, a need and desire to be physically close to people, a preference for social situations, and attentiveness to social cues" (p. 229). Research on African Americans indicates that they also tend to be interpersonally oriented. According to Madhere (1989), "when it comes to the empathic process, the leading tendency among Blacks seems to be interactive, not attributive. In other words, Blacks form their impressions mainly in terms of the elements present in a situation. The interactive modality affords them great flexibility in managing social encounters" (p. 200). Shade (1982) states further that "Afro-Americans seem to develop a unique affective or personal orientation that manifests itself in attention to social cues, subjective meanings attached to words, preference for social distance, and sustained use of nonverbal communication" (p. 221). In a similar vein, Shade and Edwards (1987) claim "that Afro-American children, because of the urban environment and social milieu in which they live and because of the various mediating experiences to which they are exposed, develop a preference for the social rather than the inanimate aspects of their environment which influence their school behavior" (p. 89). In a study of differences in social perceptions, Szalay and Bryson (1973) found that words representing themes of racial integration, individual needs, and social problems were perceived as having higher value by African Americans while European Americans preferred word domains representing various "isms," national loyalty, and health concerns. The response variation represents differences in attached affective meaning. In a study in which

groups were compared based on their attentiveness to cues in the faces of other individuals, Hirschberg, Jones, and Haggerty (1978) found that African Americans focus on very different cues than European Americans and subsequently develop different recognition patterns. These authors concluded that the African American subjects paid much more attention to the affective characteristics of the pictures of male faces than to the physical characteristics. Other studies seem to indicate that African Americans detect different social reactions and nuances. A study done by Hill and Fox (1973) of a military situation found that African American and European American squad leaders had entirely different perceptions about the climate and interrelationships of the people in their squads. Hill and Fox (1973) concluded that "white squad leaders gave proportionally more reprimands to their white as compared to black subordinates. They also gave their black subordinates better performance ratings and indicated that white as contrasted with black squad members were more uncertain than expected" (p. 685).

The research presented in this section does suggest that African Americans tend to employ field dependent cognitive styles (Cooper, 1980; Hale-Benson, 1982; Hilliard, 1976; Jones, 1978; Perney, 1976; Ramirez & Price-Williams, 1974; Shade, 1982). Specifically, researchers have indicated that African Americans are likely to utilize an interpersonal or affective cognitive orientation (Hill & Fox, 1973; Hirschberg et al., 1978; Madhere, 1989; Shade, 1982; Shade & Edwards, 1987; Szalay & Bryson, 1973). In the next section of this thesis, literature relating to the correlation between culture and cognition is explored.

Culture and Cognition

This study was undertaken, in part, in an attempt to better understand the relationship between African American culture and cognition. While the relationship between culture and cognition has been the subject of study for researchers interested in western and nonwestern cultures, Shade (1982) notes that this research has not been applied to subcultures in the following terms:

> The relationship between culture and cognitive development of the individual has become a familiar and provocative theme in cross-cultural psychology. However, although this relationship is accepted for differentiating western and nonwestern cultures, it is not widely applied to subcultures within American society. Rather than agree to the idea that the differences found in cognitive approaches might be related to a subcultural strategy, researchers generally promote the idea that ethnic differences and genetic make-up create the variation. (p. 225)

According to Anderson (1988), it is feasible that "different ethnic groups with different cultural histories, different adaptive approaches to reality, and different socialization practices would differ concerning their respective cognitive/learning styles" (p. 4).

Several scholars have claimed that socialization practices may be at least partially responsible for differences in cognition. Ramirez and Castaneda (1974) state that socialization "styles, including teaching approaches, the nature of rewards, and characteristics of the relationship between 'teacher' and learner, which children experience at home, differ from culture to culture" (p. 60). In addition, Anderson (1988) argues that because "the social, cultural, and environmental milieus of ethnic and racial groups differ, one should expect these differences to be reflected in their respective cultural/cognitive styles" (p. 4). In a similar vein, Ramirez and Castaneda (1974) have hypothesized that values and "socialization styles determine or affect development of cognitive style in children, and

differences which parallel those seen in socialization practices may be seen in several areas of behavior" (p. 60).

Cohen's (1969) research, based on a year of observing and interviewing individuals in low income neighborhoods in and around Pittsburgh, indicates that social environments may play a role in the development of cognitive style. More specifically, Cohen (1969) claims that differences in cognition observed in the course of her research may "have arisen as a result of different social environments that stimulate, reinforce, and make functional the development of one style of conceptual organization and constrain and inhibit others" (p. 830). She concludes that children who participate in structured families in "formal" styles of group organization function with analytic cognitive style. Those children who live in more fluid families that she terms "shared-function" primary groups are more likely to utilize relational cognitive styles. Cohen (1969) summarizes this research in the following terms:

> Observations indicated that relational and analytic cognitive styles were intimately associated with shared-function and formal styles of group organization. The manner in which critical functions were distributed in them seemed to parallel closely the observable cognitive functioning of their members. When individuals shifted from one kind of group structure to the other, their modes of group participation, their language styles, and their cognitive styles could be seen to shift appropriately to the extent that their expertise in using other approaches made flexibility possible. (p. 831)

This research implies that socialization plays an important role in the acquisition and development of cognitive style.

Research previously reviewed indicates that African Americans are likely to employ field dependent cognitive styles. According to Shade (1982), the "differences in perception of the world, of people, and of events is indicative of the unique socialization experiences of Afro-Americans" (p. 223). Hale Benson (1982) goes so far as to claim that African American

culture influences the development of holistic or field dependent cognitive styles. Specifically, Hale-Benson (1982) argues that "Afro-Americans participate in a culture that has its roots in West Africa. This culture gives rise to distinctive modes of child-rearing among African-American people. As a result, Black children may have distinctive learning and expressive styles that can be observed in their play behavior" (p. 5). Shade and Edwards (1987) further clarify the role of socialization in the acquisition of cognitive styles for African Americans when they state:

> The home environment is very important to the personality and cognitive development of children. For Afro-Americans, this environment takes on an even more important task, for it must prepare the child to live in a society that devalues individuals whose social and ethnic origins differ from the accepted norm. Generally, this task is performed through the perpetuation of habits, values, and attitudes that successfully mediate the interaction between the individual and the environment. From all indications, Afro-American families have found it important to stress social rather than instrumental cognition. (p. 99)

In addition, Shade and Edwards (1987) argue that individuals "who are involved in the modal Afro-American culture may be more likely to exhibit an interest in the social dimension of their environment and, thus, display a high degree of social intelligence" (p. 97). Although Shade and Edwards (1987) provide a starting point for the examination of culture and cognition, it does not necessarily follow that an interest in the social dimension causes or is related to a high degree of social intelligence.

Research by Perney (1976) also sheds light on the role of culture in cognition. In Perney's (1976) study of sixth-grade students, she found that African Americans were likely to utilize field dependent cognitive styles. While Perney (1976) noted that African American females accounted for most of the difference in scores on the Embedded Figures Test, the

results of her study led her to hypothesize that "Negro American culture (at least in the middle-class) tends to foster field dependence in its girls. This seems the only possible explanation to explain the vast difference between Negro girls and the other groups, unless the sample was not accurate" (p. 979). As the review of literature in this section indicates, the link between African American culture and cognition has not received much attention from researchers. Research in the future should more closely examine the role of culture in the development of cognitive style.

Educational Implications

One of the primary reasons for my interest in African American cognitive style is education. A surge of literature reflecting the pedagogical advantages of multiculturalism has recently emerged. While many scholars and educators have recognized the importance of diversity in the classroom, less attention has been paid to the importance of recognizing diverse cognitive styles in the classroom. However, cognitive styles represent a critical variable in the education of all students. According to Guild and Garger (1985), a "solid research base exists for the field-dependent-independent concepts but a wider knowledge and application of Witkin's work within educational circles is lacking" (p. 29). Shade (1982) highlights the relationship between cognition and educational success for African Americans in the following terms:

> It seems very possible that the differences in performance which relate to the school context and which continue to be found are the result of a culturally induced difference in Afro-American cognitive or perceptual style preference which emphasizes a person rather than an object orientation. Although this style is probably of tremendous advantage in social and interpersonal situations, it may be antithetical to school success. (p. 236)

In a similar vein, Frank (1984) argues that the "usefulness of cognitive style research depends greatly on its potential to uncover specific processing differences between field-independent and field-dependent students; such knowledge should help teachers develop classroom strategies that capitalize on the characteristics of the different styles of students" (pp. 669-670).

It is also important for educators to recognize that while African American students tend to utilize relational or field dependent cognitive styles, school environments at all levels may encourage analytic or field independent cognitive styles. As Cooper (1980) notes, in general the "school environment rewards analytic thinkers; indeed, it expects students to be task oriented and analytic in their approach to learning" (p. 45). In addition, Cohen (1969) argues that "not only test criteria but also the overall ideology and learning environment of the school embody requirements for many social and psychological correlates of the analytic style" (p. 830). Ramirez (1973) claims that some cultural groups are actually seen as deviant in many educational settings:

> In fact, in the case of some ethnic groups, it would be more accurate to say that a culture-is-damaging model has been applied. That is, the cultures of some ethnic groups (particularly blacks, Indians, and peoples of La Raza) have been viewed by educational institutions as interfering with the intellectual and emotional development of children and hindering the development of life styles and values typical of mainstream U.S. culture. (p. 895)

Rather than recognizing the diverse perspectives of relational or field dependent students, many educators have attempted to mold them to existing structures. Hale-Benson (1982) echoes these concerns for African American students when she states that the "emphasis of traditional education has been upon molding and shaping Black children so that they can be

fit into an educational process designed for Anglo-Saxon middle-class children" (p. 1). Cohen (1969) claims that school environments which fail to recognize diverse cognitive styles may reduce the chances for success of field dependent students:

> For analytic children the school's formal organization acts as an additional reinforcer of analytic thinking as well as of its related social behaviors. For relational children, however, its impact on conceptual patterning is disorganizing; its climate lacks the cues necessary to understanding, or they are ambiguous; and its requirements for social participation are of low value. (p. 837)

Research on cognition in the classroom has demonstrated important differences between field independent and field dependent students. Initially, research by Frank (1984) has shown that field independents are more efficient at taking notes than field dependents which improves their performance over field dependents. After administering the Hidden Figures Test and the Advanced Vocabulary Test II to a group of 160 female undergraduate students, Frank (1984) compared the performance of field independent and field dependent students on various note taking tasks. Frank (1984) summarizes his findings in the following terms:

> The results of the present study provide evidence that the typical classroom procedures in which the teacher lectures and students take notes may favor the performance of field-independent students over field-dependent students. Thus, teachers may want to consider providing students with external organizational aids while lecturing, perhaps through outlines on either an overhead projector, a blackboard, or a handout. By clearly presenting the structure of a lecture, the teacher may be able to help the performance of the field-dependent student without hindering the performance of the field-independent student. (p. 677)

In addition, research by Berger and Goldberger (1979) has demonstrated that field independents are more task oriented and able to focus attention on the relevant aspects of a task. These scholars administered the Vocabulary Test, Rod-and-frame Test, Embedded Figures Test, and Short-term memory tests to a group of 74 undergraduate students. Berger

and Goldberger (1979) concluded that the "findings of the present study seem to give strong support to the conceptions of field independence as involving the ability to attend selectively and the tendency to be task-oriented" (p. 96).

The literature on cognition in the classroom also suggests that field independent and field dependent students differ in the kind of subjects they prefer as well as in how they learn. Saracho (1988) claims that in "studying the relationship of cognitive style to academic achievement, it has been found that field independent students prefer sciences and math, while field dependent students prefer social science" (p. 216). Saracho (1988) also claims that field dependent "students understand material which is tightly organized; whereas field independent students can understand material which is 'loosely organized" (p. 216). In addition, Witkin et al. (1977) argue that because "of their social orientation relatively field-dependent children are apt to be particularly adept at learning and remembering materials that have social content" (p. 19). Saracho (1990) also states that field dependent students tend to prefer material with a social content while field independent students generally prefer a more impersonal environment:

> FD students learn better with materials which have a social content. FI students learn better with material focusing on general principles. Impersonal abstract subject areas such as mathematics and physical sciences are preferred by FI students. FD students favor group and exploratory experiences but FI students favor independent work, and impersonal, direct forms of instruction. (p. 100)

Shade and Edwards (1987) also claim that interpersonal closeness in the classroom is extremely important to African American students:

> As part of this emphasis on social aspects of the environment, Afro-American children seek to identify feelings, acceptance, and emotional closeness. The interpretations of these factors determine the amount and kind of effort the students will expend on

> classroom tasks, and, thus, sets the stage for the quality of their academic performance. (p. 98)

It is important to note that while differences exist between field independent and field dependent students in the classroom, their cognitive performance can be equal if the learning environment is balanced. Saracho (1988) highlights this possibility in the following terms:

> The social orientation of relatively field dependent children provides them with skills to learn and remember materials with social content. Field independent children may not do as well with those materials not because of a lack of ability or attention. The performance of field dependent children can be equal to that of field independent children with social material, as was reported in studies which made the learning of social material an intentional assignment. Thus, the functioning of both field dependent and field independent children is equal if the appropriate strategies and techniques are used. (p. 219)

While the purpose of my research is not to develop strict criteria for instructors in all disciplines to follow, I do feel it important to cite important pedagogical concerns in the literature regarding cognitive style and instruction. In addition, these concerns help substantiate reasons for research on cognition in the classroom. According to Cooper (1980), teachers must learn to recognize differences in cognition in the classroom because only "with such awareness can the teachers adopt the method that will best suit the individual student" (p. 49). Gorham (1990) notes that communication instructors specifically must be aware of different cognitive styles when she claims that:

> Insofar as the development of communication competencies is regarded as a stepping stone to successful competition in academic, employment, and social environments, communication teachers should be aware that differences in cognitive processing may make traditional instructional techniques, which are geared toward FIs, difficult for some students. (p. 212)

Also, Nance and Foeman (1993) note that "in the process of teaching African American students to learn in 'their way,' many institutions miss the opportunity to experience these

students' other ways of being and learning and thereby fail to tap the full range of understanding, creativity, and potential to participate and contribute these students offer" (p. 452). Banks (1988) suggests that teachers should use a variety of teaching styles to accommodate all students.

> Teachers should recognize that students bring a variety of learning, cognitive, and motivational styles to the classroom, and that while certain characteristics are associated with specific ethnic and social-class groups, these characteristics are distributed throughout the total student population. This means that the teacher should use a variety of teaching styles and content that will appeal to diverse students. (p. 466)

Moreover, Nance and Foeman (1993) argue that speech teachers must respond to African American cognitive styles:

> Beyond training our students to stand before a group and give a reasonably coherent statement, teachers of public speaking seek to encourage students to be well-rounded communicators who can effectively share exciting ideas in their own best ways with real and diverse audiences. For this to happen for larger numbers of African American students and other students of color, public speaking teachers must begin to respond to these students' ways of thinking, knowing, and communicating. (p. 456)

Finally, the intention of this essay is not to develop or reinforce societal stereotypes of any group. I agree with Shade (1982) who claims that "unlike the deficit theory approaches, which blame the victim for lack of success, the focus of a stylistic approach to learning requires the identification of diversity within the education setting" (p. 238). This approach simply suggests that we must be aware of cultural diversity in the classroom. The rationale for ethnographic methodology, setting, participants, description of data, methods for data analysis, and transcript procedures are discussed in the next section.

METHODOLOGY

In this section, the rationale for ethnographic methodology, setting, participants, and description of data are discussed. It is important to examine these factors prior to the analysis of data as they provide the framework for that analysis.

Rationale for Ethnographic Methodology

I will follow the methodology of ethnography in my investigation of African American cognitive styles. As Agar (1990) notes, ethnography "is an ambiguous term; it refers both to a research process and to a textual product" (p. 73). Wolcott (1990) clarifies ethnographic methodology by claiming that a commitment to ethnography "traditionally has meant to commit to looking at, and attempting to make sense of, human social behavior in terms of cultural patterning" (p. 48). In addition, Taylor and Bogdan (1984) argue that qualitative methodology can be characterized according to the following ten criteria: (a) qualitative research is inductive, (b) the researcher looks at settings and people holistically, (c) qualitative researchers are sensitive to their effects on the people they study, (d) qualitative researchers try to understand people from their own frame of reference, (e) the qualitative researcher suspends, or sets aside, his or her own beliefs, perspectives, and predispositions, (f) for the qualitative researcher, all things are valuable, (g) qualitative methods are humanistic, (h) qualitative researchers emphasize validity in their research, (i) for the qualitative researcher, all settings and people are worthy of study, and (j) qualitative research is a craft (pp. 5-8). These criteria provide a broad framework for ethnographic methodology.

Irwin (1987) explains that ethnographic methodology is a valuable tool for the discovery of knowledge by stating that "the close study of subjects uncovers their humanity. Though

this does not necessarily result in an unquestioning acceptance or tolerance of all subjects' behavior, which would be the error of romanticism, it promotes knowledge and an appreciation of their meaning worlds, motivations, and aspirations" (p. 47). In a similar vein, Spradley (1980) claims that "any explanation of behavior which excludes what the actors themselves know, how they define their actions, remains a partial explanation that distorts the human situation. The tools of ethnography offer one means to deal with this fact of meaning" (p. 16). In other words, ethnographic methods allow the researcher to tap into the perspective of the group under study. In addition, Agar (1982) explains that the ethnographer's goal is to bridge communication gaps between cultures when he states that the "ethnographer is trying to produce a report for somebody else, to show how the life of some group makes sense" (p. 783). Tedlock (1991) clarifies this point by stating that since "we can only enter into another person's world through communication, we depend upon ethnographic dialogue to create a world of shared intersubjectivity and to reach an understanding of the differences between the two worlds" (p. 70). As these authors verify, the goal of ethnography is to bridge communication gaps between different cultures. The ethnographer seeks a detailed understanding of those under study then translates that understanding to others.

I believe that the methodology of ethnography is best suited for my study of African American cognitive styles. Initially, ethnography is designed to allow the researcher to tap into the perspectives of those under study. Linstead (1993) further clarifies the methodological advantages of ethnography in the following terms:

> As a methodology it has the capacity to embody a variety of perspectives and settings; it can be regarded as the natural methodological and discursive response to epistemological and existential fragmentation; as a qualitative account its strength has been its theoretical description; it adapts easily to the "linguistic turn" in social analysis and incorporates an awareness of subjectivity; and it offers the possibility of "ethical" social science. (p. 98)

Also, Woods and Hammersley (1993) argue that ethnography is a particularly appropriate methodology for educational research "as a result of its open-ended orientation and concern with detailed investigation of diverse perspectives and of the complexities of human social interaction" (p. 1).

Setting

The setting for this study will be a large urban high school in an Illinois community. The selected population will include students in different speech classes. Specifically, I anticipate utilizing students in basic public speaking, intermediate-level public speaking, and advanced public speaking courses. These classes should provide me with a broad range of students at different levels of communicative ability. In addition, I will focus on classes that provide a balanced representation of white and African American students.

The study will be conducted over a period of several months. Over the course of these months, I will carry a note pad to record all observations and interviews. I will also interact with students on an informal basis. For example, I may join the students in classes, various daily activities, and informal discussions. By the second observation, I hope to establish enough rapport with informants to begin audio-taped interviews. These interviews will form the foundation of the analysis of cognitive styles. Signed consent forms will be obtained from the participants prior to the interviews.

Participants

The participants for this study include all individuals in the setting who are observed or interviewed. In addition, I recognize myself as one of the participants. Since I also serve as interviewer, it should be noted at this point that I will use the terms "researcher" and "interviewer" interchangeably to refer to myself as I describe and analyze data.

The participants from this high school will be classified as "informants" or "key informants." "Informants" include students observed and informally interviewed, but not interviewed on audio tape. "Key informants" include the instructor of the speech classes observed and students with whom this researcher interacts frequently and conducts audio-taped interviews. The participants will represent a broad range of individuals involved with public speaking, policy debate, and individual events. I anticipate observing students in the following three speech classes: basic speech, public speaking, and advanced public speaking. It is my hope that many of the students enrolled in the public speaking and advanced public speaking classes also participate in policy debate and/or individual events. Policy debate involves a team of two individuals who argue both sides of a predetermined topic for the duration of the academic year. The activity utilizes logical analysis of the issues combined with supporting research. In contrast, individual events do not always involve a team effort. Rather, an individual or individuals prepare speeches (extemporaneous, oratory, informative, and Lincoln Douglas debate) or interpretations of literature (dramatic, humorous, and poetry). The emphasis in individual events is on presentation as well as logical analysis. While the communicative ability of the debaters is important, there is also a strong emphasis on research and logical analysis.

The selection of student informants will occur randomly. In other words, I will not enter the setting having already selected them. This method should least limit the variety of potential subjects. The instructor may also introduce me to informants. In addition, I may gain informants by approaching students in class.

Description of Data

Participant Observation

The data for this study will come from a variety of different sources. A large portion of the data will be generated through participant observation. Goffman (1989) defines participant observation as a means of acquiring data "by subjecting yourself, your own body and your own personality, and your own social situation, to the set of contingencies that play upon a set of individuals, so that you can physically and ecologically penetrate their circle of response to their social situation, or their work situation, or their ethnic situation or whatever" (p. 125) As this definition notes, ethnographic methodology emphasizes unobtrusive participation and immersion in the culture under study as a primary means of understanding that culture. Conquergood (1991) expands this analysis by stating that "the obligatory rite-of-passage for all ethnographers–doing fieldwork–requires getting one's body immersed in the field for a period of time sufficient to enable one to participate inside that culture. Ethnography is an embodied practice; it is an intensely sensuous way of knowing" (p. 180). Agar (1982) explains that through participant observation "we gain access to the flow of life from which strips will be abstracted for reflective study. Finally, it is through the development of rapport in participant observation that we increase the chances that expressions of group life will occur without being modified for the view of a temporary

stranger" (p. 792). In this sense, participant observation allows the ethnographic researcher to tap into the meanings and perspectives of the group being studied. Emerson (1987) clarifies this point by stating that:

> Participant observation as contemporarily understood locates its strength less in putting the researcher in a position to bypass the selectivity and contamination of members' accounts, and more in putting the researcher in the position to learn what is meaningful to members--hence the emphasis on participation, on fieldwork as socialization into other ways of knowing and doing. (p. 75)

I will conduct several observations at the high school over the course of this study. I hope to observe students working in the library, during class lectures and discussions, as well as performing student speeches.

In-Depth Interviews

To further explore cognitive styles, in-depth interviews will be conducted which examine the students' perceptions about their cognitive styles. Taylor and Bogdan (1984) define in-depth interviewing as "repeated face-to-face encounters between the researcher and informants directed toward understanding informants' perspectives on their lives, experiences, or situations as expressed in their own words" (p. 77). According to Spradley (1980), ethnographic interviews allow the researcher to tap the informants' "knowledge about a particular cultural scene; you are making use of their informal skills as participant observers" (p. 124). In addition, Frey, Botan, Friedman, and Kreps (1992) claim that ethnographic interviews "are also essential for getting 'below the surface' and discovering what people think and feel about particular communication events" (p. 285). Finally, while researchers run the risk that informants will not be completely honest in responding to interview questions, Silverman (1993) notes that authenticity "rather than reliability is often the issue in

qualitative research. The aim is usually to gather an 'authentic' understanding of people's experiences and it is believed that 'open-ended' questions are the most effective route towards this end" (p. 10).

I will interview a number of different students. I hope to interview a balanced number of African American and Caucasian students. Prepared interview questions include:

1. How do you characterize your thinking?
2. How do you support ideas in a speech?
3. Do you have a preference for debate or forensics?
4. What subjects do you prefer in school?
5. Do you see yourself existing within a unique culture?
6. If you could change one thing about the school environment, what would it be?

In the process of collecting interviews, I hope to established rapport with the students so that the interviews closely resemble conversational discourse. This should allow the students to initiate more spontaneous topics and enable both researcher and student to expand upon the prepared questions. Also, establishing rapport with the students may allow for the development of a mutually relaxed atmosphere which contributes to the quality of the data collected. Although these six questions provide a general framework for discussion, additional questions which elaborated on students' responses are expected.

Triangulation

In addition to participant observation and in-depth interviewing, I will administer Cognitive Style Assessments (CSAs) and the Group Embedded Figures Test (GEFT) to triangulate my research. According to Taylor and Bogdan (1984), triangulation "is often

thought of as a way of guarding against researcher bias and checking out accounts from different informants. By drawing on other types and sources of data, observers also gain a deeper and clearer understanding of the setting and people being studied" (p. 68). The combination and integration of methods acts as a means of cross-checking data obtained from participant observation and in-depth interviews, thus limiting potential subjective bias

A total of 3 CSAs will be developed and administered to the students. The CSAs will be used during the interviews to provide the students with a specific cognitive task to recall. The following CSA is one of the three given to the students.

> Instructions: Please read over the following question carefully and formulate an answer. As you construct the answer, please carefully think about your thinking. What happens as you think? What happens first, then what, then what, and what do you end up with? How did you get there? How do you weigh or evaluate important concepts? In other words, I am interested not in the specific answer you develop but the step-by-step thinking process that leads you to that answer.
>
> Assume that you have promised to spend Saturday night watching movies with your parents. Your best friend calls on Saturday afternoon and tells you that she/he has one extra ticket to a concert that is sold out. In addition, you quickly realize that the band playing is your favorite band. What would you do?

This CSA simply asks the students what they would do if put in a situation where a choice had to be made regarding spending time with friends or family. As the instructions indicate, I am interested in examining the step-by-step thinking process that the students utilize in developing an answer. The two other CSAs are more logic oriented. The CSA on the greenhouse effect requires the students to determine the assumptions of an argument. The CSA on cockroaches requires the students to determine the amount of time it will take rapidly reproducing insects to fill a half gallon bucket. The CSAs are designed to tap into the

students' cognitive style by providing them with a specific problem solving situation. Copies of all three CSAs can be found in Appendix A, B, and C.

To further triangulate my research, I will administer the GEFT to different groups of high school students. The GEFT is a modified form of the Embedded Figures Test (EFT) developed by Witkin, Oltman, Raskin, and Karp (1971). Witkin et al. (1971) explain the nature of the EFT in the following terms:

> The EFT is a perceptual test. The subject's task on each trial is to locate a previously seen simple figure within a larger complex figure which has been so organized as to obscure or embed the sought-after simple figure. In the strictest interpretation, therefore, scores on the EFT reflect extent of competence at perceptual disembedding. (p. 3)

The GEFT is a group-administered, 25-item test administered in three timed sections (2, 5, and 5 minutes each). As already noted, the form of the test is very similar to the EFT. The individual must trace one of eight simple figures embedded in figures of greater complexity. The test has been shown to be reliable (r .82) and is highly correlated to the EFT (r .63 .82) on the two forms. Witkin et al. (1971) highlight the methodological advantages of the GEFT as a tool for assessing cognitive style:

> First of all, because perceptual functions are easily accessible to study by objective procedures, measures from tests of these functions have the status of "tracer elements" in pegging level of differentiation. Further, the perceptual function of disembedding featured in the EFT is a universal one in human experience and the task itself may be made meaningful to groups of different mental levels and of widely varied socioeducational backgrounds. (p. 14)

The GEFT will be used in this study to provide an additional tool to quantitatively measure cognitive style and to corroborate emerging themes in the qualitative data collected.

Conclusion

Understanding cultural and cognitive differences is an important issue for educators. As Shade (1982) suggests, "the available evidence could lead to the conclusion that the difference in school success is attributable to the use of sociocentric, field-dependent, nonanalytic categorizing information processing strategies by many Afro-Americans" (p. 233). Shade (1982) highlights a critical concern for all interested in education; if the educational system is oriented around field-independent cognitive styles, those who utilize field-dependent cognitive styles are placed at a disadvantage. Cohen (1969) found that educational environments in this country characteristically favor field-independent learning styles. According to Cooper (1980), teachers must learn to recognize different cognitive styles and "they must be made aware that such a feature comes about as students attempt to move to an educated style. Only with such awareness can the teachers adopt the method that will best suit the individual students" (p. 49).

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APPENDIX A:

COGNITIVE STYLE ASSESSMENT: GREENHOUSE EFFECT

Instructions: Please read over the following question carefully and formulate an answer. As you construct the answer, please carefully think about your thinking. What happens as you think? What happens first, then what, then what, and what do you end up with? How did you get there? How do you weigh or evaluate important concepts? In other words, I am interested not in the specific answe you develop but the step-by-step thinking process that leads you to that answer.

Scientists predict that the greenhouse effect will significantly alter weather patterns. Dramatic climatological changes on earth due to the greenhouse effect are already underway. In fact, floods that ravaged the Midwest in the summer of 1993 offer some of the earliest proof that the earth's environment has been altered.

This argument assumes which of the following?

(A) Scientists have conclusively proven the existence of a greenhouse effect.
(B) Floods will ravage the Midwest in the summer of 1994.
(C) The earth's climate will soon begin to show signs of extreme change.
(D) The floods that occurred last summer substantiate the existence of the greenhouse effect.
(E) Greenhouse induced climate change threatens life on earth

APPENDIX B:

COGNITIVE STYLE ASSESSMENT: PARENTS

Instructions: Please read over the following question carefully and formulate an answer. As you construct the answer, please carefully think about your thinking. What happens as you think? What happens first, then what, then what, and what do you end up with? How did you get there? How do you weigh or evaluate important concepts? In other words, I am interested not in the specific answer you develop but the step-by-step thinking process that leads you to that answer.

Assume that you have promised to spend Saturday night watching movies with your parents. Your best friend calls on Saturday afternoon and tells you that she/he has one extra ticket to a concert that is sold out. In addition, you quickly realize that the band playing is your favorite band. What would you do?

APPENDIX C:

COGNITIVE STYLE ASSESSMENT: COCKROACHES

Instructions: Please read over the following question carefully and formulate an answer. As you construct the answer, please carefully think about your thinking. What happens as you think? What happens first, then what, then what, and what do you end up with? How did you get there? How do you weigh or evaluate important concepts? In other words, I am interested not in the specific answer you develop but the step-by-step thinking process that leads you to that answer.

There are two cockroaches in a half gallon bucket. Every minute, the number of cockroaches doubles. If the bucket is filled in half an hour, how long is it before the bucket is only half filled?